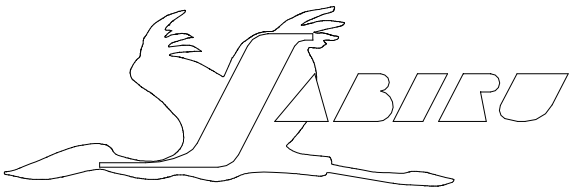
INSTALLATION MANUAL
FOR
JABIRU 3300 AIRCRAFT ENGINE



This Manual has been prepared as a guide to correctly install the Jabiru 3300 engine into an airframe.

Should you have any questions or doubts about the contents of this manual, please contact Jabiru Aircraft Pty Ltd.

Table of Contents

1.0 DESCRIPTION ____ *4*
2.0 SPECIFICATIONS ____ *4*
3.0 DIMENSIONS ____ *5*
4.0 DENOMINATION OF CYLINDERS ____ *5*
5.0 ENGINE MOUNT ____ *6*
6.0 CONTROLS ____ *8*
6.1 Throttle and Choke ____ **8**
6.2 Master Switch, Ignition Switches and Starter Button ____ **8**
7.0 INSTRUMENTS ____ *8*
7.1 Electronic Tachometer ____ **8**
7.2 Oil Temperature Gauge ____ **8**
7.3 Oil Pressure Gauge ____ **8**
7.4 Cylinder Head Temperature Gauge ____ **9**
7.5 Exhaust Gas Temperature Gauge ____ **9**
8.0 ELECTRICAL EQUIPMENT ____ *11*
8.1 Alternator ____ **12**
8.2 Regulator ____ **12**
8.3 Ignition ____ **12**
8.4 Starter Motor ____ **13**
8.5 Battery ____ **13**
8.6 Additional Wiring Information ____ **13**
9.0 FUEL SUPPLY SYSTEM ____ *14*
9.1 Fuel Tank ____ **14**
9.2 Fuel Filtration ____ **14**
9.3 Mechanical Fuel Pump ____ **14**
9.4 Carburettor ____ **14**
9.5 Fuel Lines ____ **15**
10.0 AIR INTAKE SYSTEM ____ *15*
10.1 Air Filter ____ **15**
11.0 EXHAUST SYSTEM ____ *15*

12.0 COOLING SYSTEMS ____ *15*
13.0 PROPELLER SELECTION ____ *16*
14.0 AUXILIARY UNITS ____ *16*
Appendix A ____ *16*
Appendix B ____ *19*

LIST OF EFFECTIVE PAGES

The dates of issue for original & revised pages are:

Page	Issue	Date
1	1	09/03/99
2	1	09/03/99
3	1	09/03/99
4	1	09/03/99
5	1	09/03/99
6	1	09/03/99
7	1	09/03/99
8	1	09/03/99
9	1	09/03/99
10	1	09/03/99
11	1	09/03/99
12	1	09/03/99
13	1	09/03/99
14	1	09/03/99
15	1	09/03/99
16	1	09/03/99
17	1	09/03/99
18	1	09/03/99
19	1	09/03/99

Installation Manual
Jabiru 3300 Aero Engine

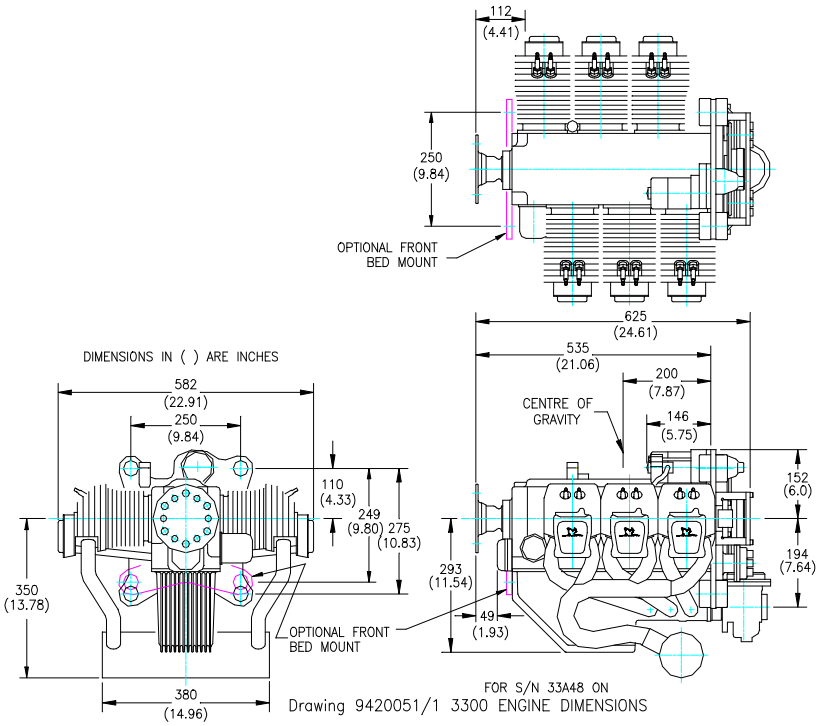
1.0 DESCRIPTION

- 4 Stroke
- 6 Cylinder Horizontally Opposed
- 1 Central Camshaft
- Push Rods
- Over Head Valves (OHV)
- Ram Air Cooled
- Wet Sump Lubrication
- Direct Propeller Drive
- Dual Transistorised Magneto Ignition
- Integrated AC Generator
- Electric Starter
- Mechanical Fuel Pump
- Naturally Aspirated – 1 Pressure Compensating Carburettor
- 8 Bearing Crankshaft

2.0 SPECIFICATIONS

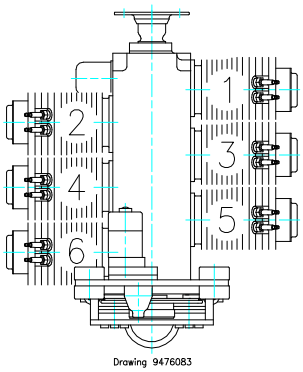
- Displacement	:	3314 cc
- Bore	:	97.5 mm
- Stroke	:	74 mm
- Compression Ratio	:	7.8:1 s/n 224 on is 8:1
- Direction of Rotation of Prop Shaft	:	Clockwise – Pilot's view – Tractor Applications
- Ramp Weight	:	81 kg (178 lbs) Complete including Exhaust, Carburettor, Starter Motor, Alternator & Ignition System.
- Ignition Timing	:	25º BTDC
- Firing Order	:	1 – 4 – 5 – 2 – 3 – 6
- DC Output	:	20 Amps
- Fuel Consumption @ 75% Power	:	24 l/hr (6 US gal/hr)
- Fuel	:	AVGAS 100LL and AVGAS 100/130 Leaded and Unleaded Motor Gasoline above 95 Octane Ron
- Oil	:	Aero Oil W Multigrade 15W-50, or equivalent Lubricant complying with MIL-L-22851C, or Lycoming Spec. 301F, or Teledyne – Continental Spec MHF-24B
- Oil Capacity	:	3.5 L (3.69 US Quarts)
- Spark Plugs	:	NGK D9EA – Automotive

3.0 DIMENSIONS



Drawing 9420051/1 3300 ENGINE DIMENSIONS

4.0 DENOMINATION OF CYLINDERS



Drawing 9476083

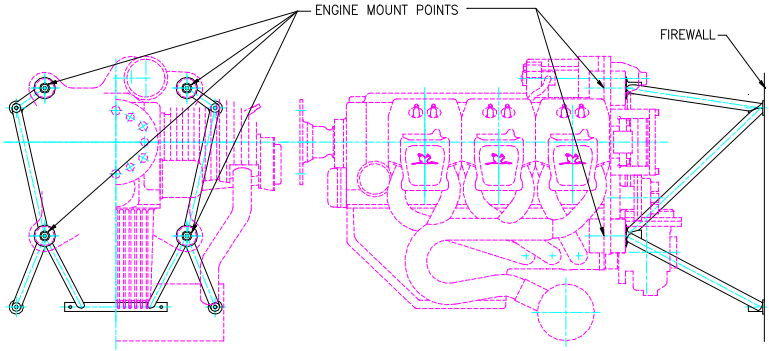
Cylinder Firing Order: 1 – 4 – 5 – 2 – 3 – 6

5.0 ENGINE MOUNT

The design of the engine mount must not only take into account the structural loadings but must make allowances for accessibility of components and the removal of equipment located at the rear of the engine.

The engine has four engine mounting points located at the rear of the engine (refer to figure 1.0) from which the engine is to be mounted. An optional bed mount may be fitted.

Figure 1.0 – Engine Mount Point Locations



The correct installation is shown below in figure 2.0

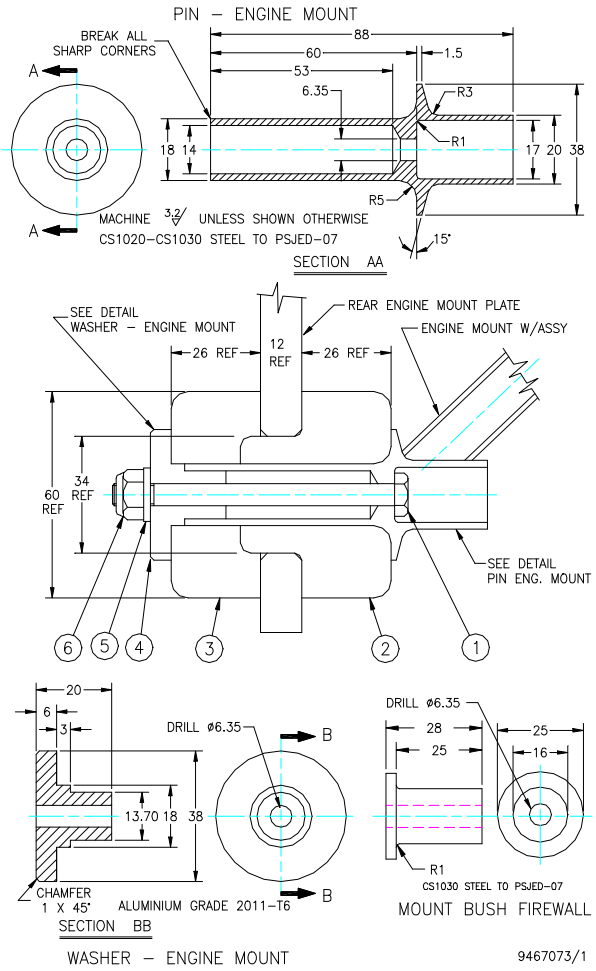


Figure 2.0 – Engine Mount Assembly

Corrections of the engine alignment may be made using spacers under the rubber cushions. The maximum spacer thickness on any one mount is 3mm.

6.0 CONTROLS

This section comprises of the mechanical controls and electrical switches.

6.1 Throttle and Choke

Provisions for the connection of the throttle and choke are made on the carburettor.
Note: Since a pressure compensating carburettor is used there is no mixture control.

6.2 Master Switch, Ignition Switches and Starter Button

The switches are connected as shown by the circuit diagram, on Page 10.

7.0 INSTRUMENTS

7.1 Electronic Tachometer

The tachometer uses a pick-up mounted on the alternator mounting bracket which 'counts' the teeth of the flywheel ring gear. Jabiru Part No. PI10772N is the recommended tachometer.
On later engines tacho picks up on 2 metal tabs attached to the inside of the flywheel. Pick up is of induction sender type.

Tachometer Wiring

3 Tachometer Negative (3) to Earth
4 Tachometer Positive (4) to Instrument
8 Tachometer to Red Wire tachometer pick-up
7 Tachometer to Black Wire tachometer pick-up

7.2 Oil Temperature Gauge

The Oil Temperature Gauge uses an electric probe mounted in the base of the sump. Jabiru Part No. PI10752N is recommended.

Oil Temperature Wiring

Black Oil Temperature Gauge Negative to Earth
Red Oil Temperature Gauge Positive to Instrument
White Oil Temperature Gauge Sensor (S) to Oil Temperature Sensor (Lower Left Eng Sump)

7.3 Oil Pressure Gauge

An electric oil pressure sender is fitted to the engine for an Oil Pressure Gauge. Jabiru Part No. PI10762N is the recommended gauge.

Oil Pressure Wiring

Black Oil Pressure Gauge Negative to Earth
Red Oil Pressure Gauge Positive to Instrument
White Oil Pressure Gauge Sensor (S) to Oil Pressure Sensor (Fwd Top Eng)

7.4 Cylinder Head Temperature Gauge

The Cylinder Head Temperature Gauge uses a thermocouple. An audit must be done to establish the hottest cylinder and the thermocouple probe should be fitted under the exhaust spark plug on that cylinder. Jabiru Part No. PI10732N is the recommended gauge.

Cylinder Head Temperature Wiring

Loom and sensor is supplied with the instrument. These must be installed as per directions. If cable is too long it must be looped as many times as necessary and strapped behind the instrument panel. Temperature of cold junction for best results should be around 50ºC. Ensure cold junction is furthest from the thermo couple probe as possible.

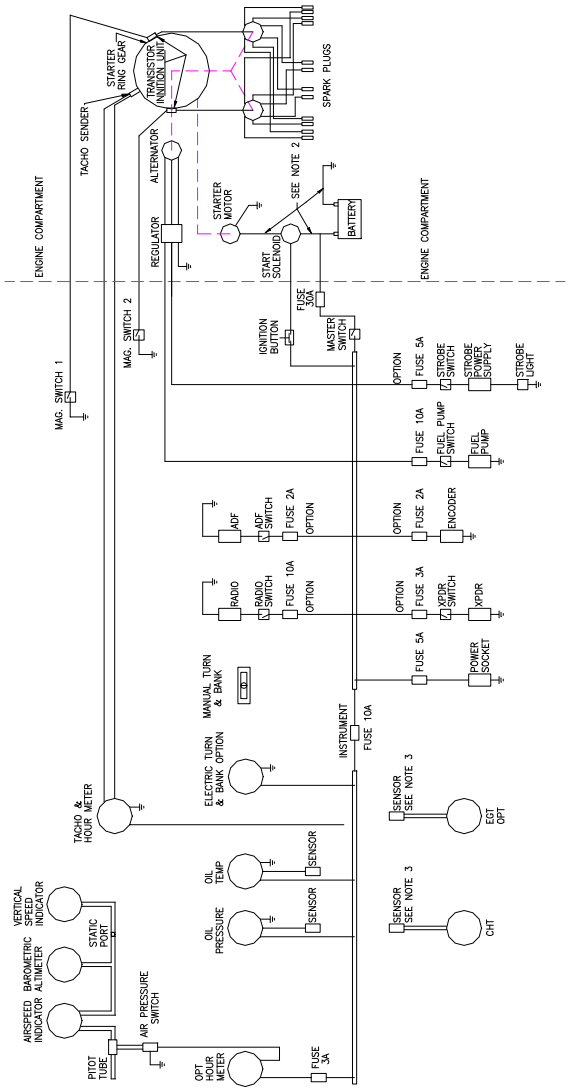
DO NOT CUT TO LENGTH

Ensure that wire is not chaffing on the fibreglass air duct or cooing fins.
No power connection is required.

7.5 Exhaust Gas Temperature Gauge

An optional Exhaust Gas Temperature Gauge can be fitted. The probe should be positioned 100mm from the port flange on the exhaust pipe of a convenient cylinder. Jabiru Part No. PI0325N is the recommended gauge.

SCAT HOSE
Remove at each 50 hourly inspection one end of each scat hose. Inspect for holes, leaks and condition of helical wound wire former. Replace if any signs of corrosion is evident.



Drawing 4119234/3 ELECTRICAL WIRING 3300

WARNING

PROBLEM – **T**hree Phase stator and regulator burning out.

WARNING – Please note brown positive wire on regulator must only carry a current when the engine is running. The brown wire must be isolated when the engine is not in use. Wiring through master switch is O.K. if the engine is started straight away. Problems will occur when engine is not started straight away e.g. someone carrying out ground testing of radios and electrical equipment. If this is carried out the brown wire will have to be isolated or the regulator and stator will burn out.

Note: Three phase units used on s/n 01 – 163. Single Phase used from s/n 164 onwards.

8.0 ELECTRICAL EQUIPMENT

8.1 Alternator

The alternator fitted to the early Jabiru 3300 engines is a three phase, permanently excited with a regulator. The rotor is mounted on the flywheel with the stator mounted on the alternator mount plate at the back of the engine. The alternator mount plate is also the mount for the ignition coils and the vacuum pump. Later engines use a single phase alternator.

Specifications

Power (Max): 200W Continuous

Note: The electrical system is Negative Earth.

8.2 Regulator

The regulator has been selected to match the voltage and current of the integral alternator. Only Jabiru Part No. PI12609N should be used. (The regulator output voltage is 14 volts ± 0.8 volt.) Single phase alternators use regulator part no: PI10652N. Recommended wiring of regulator is positive and negative directly to battery. A suitable fuse in series would be a recommendation.

8.3 Ignition

The ignition unit has dual breakerless transistorised ignition with the magnets mounted on the flywheel and the coils mounted on the alternator mount plate.

The current from the coils flows to the distributor from where it is distributed to the spark plugs. (See also Regulator Wiring at Page 12.)

The ignition is turned off by grounding the coils via the ignition switches.

The ignition is timed to 25° BTDC

The temperature limit for the ignition coils is 70°C. This should be checked by the installer. It is recommended to fit a small pipe around ½inch (12mm dia) from the top rear of the air duct and routed down to the coil to assist in cooling. Ignition coils should be mounted on insulating washers.

Transistorised Ignition 1 Wiring

No. 1 Switch – Upper to Left Transistorised Ignition
No. 1 Switch – Lower to Earth

Switch Open for Ignition ON, closed for Ignition OFF.

Transistorised Ignition 2 Wiring

No. 2 Switch – Upper to Right Transistorised Ignition
No. 2 Switch – Lower to Earth
Switch Open for Ignition ON, closed for Ignition OFF.

8.4 Starter Motor

The starter is mounted on the top of the engine and drives the ring gear on the flywheel. The motor is activated by engaging the starter button (the master switch has to be ON) which trips the solenoid, hence current flows from the battery to the motor. The cable from Battery to starter should be minimum 16mm^2 copper.

Starter Wiring

Starter Button Switch (lower) to Main Bus
Starter Button Switch (upper) to Start Solenoid (through Grommet)

8.5 Battery

The battery should be of a light weight, 12V, 20 Ah type able to accept a charging voltage up to 14 V (± 0.8V) and a 25 AMP Input.

8.6 Additional Wiring Information

Engine Hourmeter Wiring

Red	Hourmeter Positive to Positive
Black	Oil Pressure Switch to Engine Sump Bolt
Black	Hourmeter to Oil Pressure Switch (Fwd Eng Left)

Earth Wiring

Black	Battery Earth Negative to Firewall Earth (Engine Bay)
Black	Battery Earth Negative to Earth Bus

Master Wiring

Red	Starter Solenoid to Main Fuse
Red	Main Fuse to Master Switch (Lower)
Red	Master Switch (Upper) to Main Bus
Red	Main Bus to Red on Regulator

Fuel Pump Wiring

Red	Main Bus to Fuel Pump Fuse
Red	Fuel Pump Fuse to Fuel Pump Switch (Lower)

Red	Fuel Pump Switch (Upper) to fuel Pump (Red Wire)
Black	Fuel Pump (Black Wire) to Earth Bus

Regulator

Red Regulator Wire to Battery
Brown Regulator Wire to Positive (only when ignition is on)
Black Regulator Wire to Earth
3 Yellow Regulator Wires to any 3 White Alternator Wires

Single Phase – 2 alternator wires to pale blue, red and yellow to positive bus and black to negative bus.

Battery Cables

Black	Starter Motor Mount (Engine Rear) to Battery Negative
Red	Battery Positive to Starter Solenoid
Red	Starter Solenoid (Switched) to Starter Motor (Part of)

9.0 FUEL SUPPLY SYSTEM

9.1 Fuel Tank

The fuel tank must be fitted with an outlet strainer of between 8 and 16 mesh per inch, with a minimum total mesh area of 5 cm^2.

9.2 Fuel Filtration

A Fuel filter capable of preventing the passage of particles larger than 0.1mm (100um) must be installed between the fuel tank outlet and the fuel pump.

The filter must be present in the system for the fuel flow test. The size of the filter should give consideration to allow adequate flow with a used filter.
A Ryco Z15 or similar filter has been used successfully.

9.3 Mechanical Fuel Pump

The mechanical fuel pump is mounted on the engine crankcase and is camshaft driven. It is designed to supply fuel at the pressure described in the following paragraph. To prevent fuel vaporization in the fuel pump a small amount of air directed onto the pump is advised, especially when using mogas. Electric Boost Pump must also be capable of no more than 3lb pressure.

9.4 Carburettor

A Bing constant depression type is used. This carburettor has a minimum delivery pressure of 5 kPa (0.75 Psi) and a maximum pressure of 20 kPa (3 psi). To confirm that the fuel system is capable of delivering this pressure a fuel flow test must be performed. A method for performing a fuel flow test is available from Jabiru if required. A drip deflector to deflect overflowing fuel from the exhaust system is supplied as standard equipment on the engine.

Because the engine is dyno run some adjustment of the 7mm idle set screw may have to be made. A hot idle of around 700 RPM is desirable. Earth strap from carby to crankcase is recommended.

9.5 Fuel Lines

Fuel lines are nominally 6mm bore. All hoses forward of the firewall require fire resistant sheathing and those between moving sections such as between engine and firewall should be flexible. Hoses must be changed every two years.

10.0 AIR INTAKE SYSTEM

10.1 Air Filter

The air filter must be of a type so as to not cause positive RAM induction pressure.

The filter must be capable of supplying 250 kg/hr (550 pph) of air

The filter may have to be changed at regular intervals if the engine is to be used in a dusty environment. Air flow should be as direct as possible, no tight bends and air taken from outside the cowl.

11.0 EXHAUST SYSTEM

An exhaust system is provided with the engine. Both Pusher and Tractor systems are available.

Muffler Volume – Capacity 5 litres

Back pressure at Takeoff Performance – Max 0.2 bar (2.9 psi) – readings taken 70mm from muffler flange connections.

Exhaust Gas Temperature (EGT) - Nominal 650^{o} – 750^{o} (1202^{o}F – 1382^{o}F) measured 100mm from the exhaust manifold flange.

12.0 COOLING SYSTEMS

The engine should be installed using RAMAIR ducts provided with the engine.

Cylinder and cylinder head cooling is achieved by ducting air over the cylinders and heads. The static air pressure inside the cooling ducts must not be lower than 4.3cm (1.7") water gauge at 1.3 times the stall speed.

An oil cooler should be installed and sized to achieve oil temperatures within the engine limits. Hoses should be nominally 8mm (5/16") bore. Hoses must be changed every 2 years. Later coolers accept 3/8" diameter hoses.

The limits in the Specification Sheet, contained in Appendix B, must be strictly adhered to. Warranty will not be paid on engine damage attributed to overheating of cylinders or oil.

The cooling ducts provided are only a starting point in establishing effective engine cooling. The ducts may require to be increased in size and additional baffles provided to achieve the specified maximum cylinder head temperature of 175^{o}C.

Air ducts should have an air bleed hole of around 25mm in dia cut into the inside top of each air duct and facing the crankcase. This provides air over the crankcase region. The air ducts may need increasing in size and additional baffles depending on installation. See head temperature range page 20.

13.0 PROPELLER SELECTION

The hub of the propeller must be drilled with holes to match the flange. The propeller must be carefully selected to match the airframe and the engine. Propellers up to 1778mm (70") in diameter and between 762mm (30") and 1397mm (55") in pitch may be used. The propeller flange is drilled with 6 5/8" holes at 4 3/8" PCD.

Movements of inertia up to 0.3 kgm^2

Applications outside this range should be referred to Jabiru.

14.0 AUXILIARY UNITS

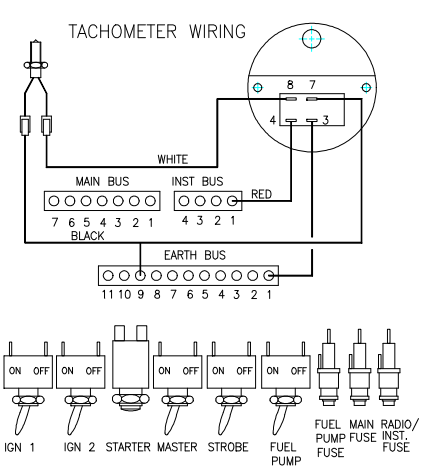
Vacuum Pump
For the installation of an artificial horizon and/or a direction gyro a vacuum pump is necessary. A Tempest 212CW (or equivalent) vacuum pump can be fitted to the alternator mounting plate and directly coupled to the crankshaft. The drive pad is dry.

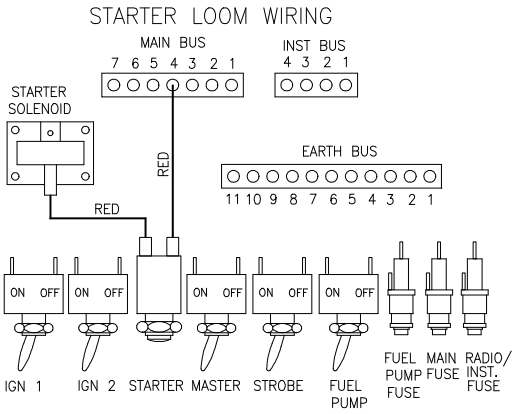
The pad and spline are SAE Standard.

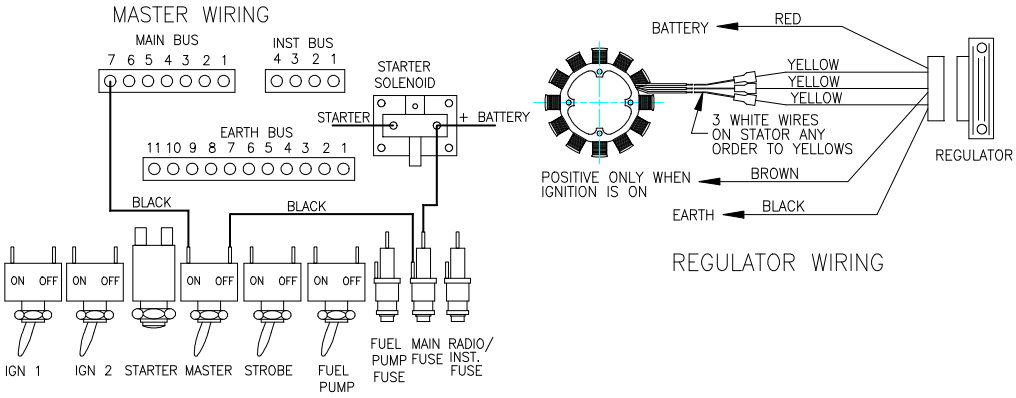
NOTE:
Unless operating in cool environments oil coolers are mandatory. The adapter is fitted under the oil filter and can be plumbed either way to the cooler. Continuous operation with oil

temperatures between 70 degrees and 90 degrees Celsius is desirable.

Appendix A


TACHOMETER WIRING
8 7
4 3
WHITE
MAIN BUS
7 6 5 4 3 2 1
INST BUS
4 3 2 1
RED
BLACK
EARTH BUS
11 10 9 8 7 6 5 4 3 2 1
ON OFF
IGN 1
IGN 2
STARTER
MASTER
STROBE
FUEL PUMP
FUEL PUMP FUSE
MAIN FUSE
RADIO/ INST. FUSE


STARTER LOOM WIRING
MAIN BUS
7 6 5 4 3 2 1
INST BUS
4 3 2 1
STARTER SOLENOID
RED
RED
EARTH BUS
11 10 9 8 7 6 5 4 3 2 1
ON OFF
IGN 1
IGN 2
STARTER
MASTER
STROBE
FUEL PUMP
FUEL PUMP FUSE
MAIN FUSE
RADIO/ INST. FUSE


MASTER WIRING
MAIN BUS
7 6 5 4 3 2 1
INST BUS
4 3 2 1
STARTER SOLENOID
STARTER
+ BATTERY
EARTH BUS
11 10 9 8 7 6 5 4 3 2 1
BLACK
BLACK
ON OFF
IGN 1
IGN 2
STARTER
MASTER
STROBE
FUEL PUMP
FUEL PUMP FUSE
MAIN FUSE
RADIO/ INST. FUSE
BATTERY
RED
YELLOW
YELLOW
YELLOW
3 WHITE WIRES ON STATOR ANY ORDER TO YELLOWS
REGULATOR
POSITIVE ONLY WHEN IGNITION IS ON
BROWN
EARTH
BLACK
REGULATOR WIRING

Appendix B

SPECIFICATION SHEET

Models: Jabiru 3300

1. MANUFACTURER Jabiru Aircraft Pty Ltd
P.O. Box 5186
Bundaberg West
Queensland 4670

2. ENGINE PARTICULARS

3.1	***Description***	Six cylinder, horizontally opposed, four stroke engine, direct propeller drive, air cooled, wet sump, pressure lubricated, dual magneto high voltage transistorised contactless ignition, 1 x constant-pressure carburettor, electric starter, generator, mechanical fuel pump. Vacuum pump optional.
3.2	***Displacement***	3314 cm^3
3.3	***Bore***	97.5 mm
3.4	***Stroke***	74 mm
3.5	***Compression Ratio***	7.8 : 1 s/n 224 on is 8:1
3.7	***Net Dry Weight***	81 kg (includes exhaust, starter, flywheel alternator)
3.8	***Propeller Rotation Direction***	Clockwise (viewed from rear)

3. ENGINE PERFORMANCE

Static sea level ratings under the following conditions:-

(a) International Standard Atmospheric conditions at sea level.
(b) Aircraft service equipment drives unloaded. (Vacuum Pump not fitted)
(c) Full rich fuel/air mixture.
(d) Maximum cylinder head temperature.
(e) Standard Jabiru air filter and cold air.
(f) Standard exhaust muffler.

4.1 Engine Ratings

Maximum	120 HP / 3300 RPM	ISO STD Conditions

5. OPERATING LIMITATIONS

5.1 RPM

Maximum	:	3300 RPM
Recommended Cruise	:	2750 RPM

5.2 Engine Cooling

Cylinder Head Temperature

Takeoff	175°C Maximum
Continuous	150°C Maximum

5.3 Fuel

5.3.1 Specifications
Avgas 100LL & Avgas 100/130
Leaded and Unleaded Motor Gasoline above 95 Octane Ron

5.3.2 Pressure to Carburettor (above ambient)

(a) Maximum	20 kPa
(b) Minimum	5 kPa

WARNING – When using auto fuels, ensure all components of the fuel delivery system are cooled to prevent fuel vaporization.

5.4 Oil

5.4.1 Specification
Aero Oil W Multigrade 15W-50,
or equivalent Lubricant complying with
MIL-L-22851C, or
Lycoming Spec. 301F, or
Teledyne - Continental Spec MHF-24B

5.4.2 Inlet Temperature

Minimum for Operation	15°C
Maximum	118°C
Continuous	80°C – 100°C

5.4.3 Pressure

Normal Operations	Min	220 kPa
	Max	525 kPa
Idle	Min	80 kPa
Starting & Warm Up	Max	525 kPa

6. TYPES OF PROPELLER

Fixed pitch wooden propellers.
Maximum propeller diameter 1778mm (70").

7. EQUIPMENT

(a) The following equipment is included in the engine approval:-

Carburettor: 1 x Bing constant Pressure carburettor Type 94/40
Main Jet 2.80, Needle Jet 280 (278)

Fuel Pump: Mechanical, Jabiru part No: PG10332N

Ignition System: Jabiru dual magneto, high voltage transistorised, contactless.
Part No: PI10522N

Spark Plugs: NGK D9EA

Alternator: Integrated Jabiru, permanent magnet three phase alternator or single phase type.

Starter: Jabiru 12V/1.0 kW, engagement via reduction gear and freewheel.
Bosch type part no: 4776093.

(b) The following optional equipment may be driven by or fitted to the engine subject to the type number being included in the approved Jabiru Aircraft Pty Ltd engine specification:-
Vacuum Pump

Appendix C

Tips on Jabiru Engine Installations

1. **Prop** Standard of 2800 – 2900 RPM at take off and 3200 in the air straight and level. This will vary from aircraft and prop type. Variation from these with prop lead will affect tuning. Carby tuning must not be altered other than with advice from Jabiru Aircraft.
2. **Tacho** Accuracy is obvious. Check with another instrument
3. **Cooling** Cowls should have adequate entry and exit areas. Care taken not to flood the cowl area with oil cooler air. Air ducts as supplied are starting points.
4. **Air Induction** Entry from outside the cowl. All scat hoses should have only slight bends, no sharp edges on exiting air. Adequate filter size.
5. **Carby** Bowl vent to filtered side of air box. Two sense holes on rear of venture should not be obscured. Correct idle hot. Ensure throttle and choke movement is correct.
6. **Fuel Pump** Ensure boost pump is not capable of more than 3lb pressure.
7. **Oil** Correct type used for first 25 – 30 hours. Expel inhibiting oil from cylinders and pressure up before first start. Oil coolers are mandatory. Do not overfill the engine.
8. **Fuel** Only Avgas 100LL or MOGAS above 95 Octane to be used. Fuel filter in line. Full tank vented.
9. **Oil Overflow** Use of small collector for engine oil venting.
10. **Heads/Valves** (See section on early operation 4.7) Valve clearance and head tension done at regular intervals.
11. No Oil or fuel additives should be used
12. **Temperature** Refer to correct temperature operation of the engine
13. **Connections** G on oil pressure sender to gauge
    W is for warning light
    Regulator as per instructions.
    Oil temp
    CHT
    EGT
    Fuel hoses/oil hoses with heat shield
    Correct throttle/choke movement
    Carby heat arrangement working
    Correct scat hoses and directions
    Sump vent pipe to collection bottle
14. Poor connections and air gaps to ducts/cooler etc give second rate cooling

15. Check for contact of engine to cowl.

16. Damage caused by overheating due to poor installation techniques would not be covered under warranty. Operation of the engine on non approved oils and fuel will likewise not be covered.

17. Overall performance of engine and airframe depends on correct installation and prop match.

Installation Manual
Jabiru 3300 Aero Engine

Typical Installation- 4/6 Cylinder Jabiru Engine

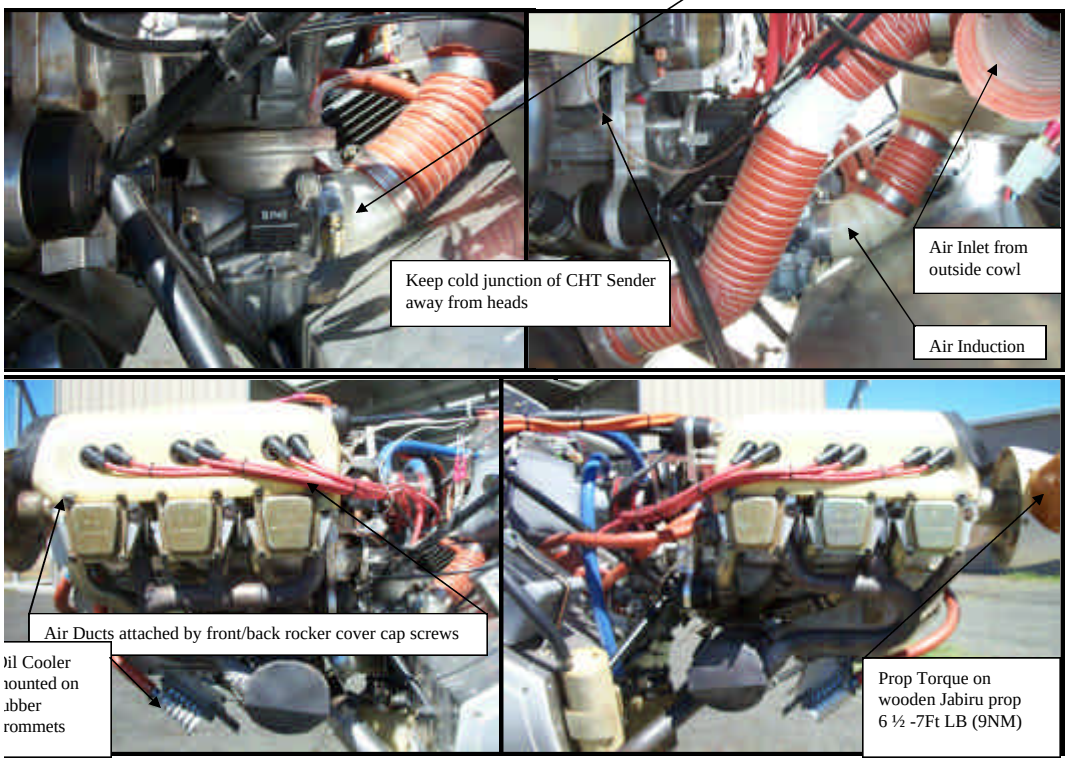
Reference: Drawing
Photos

Parts Required:

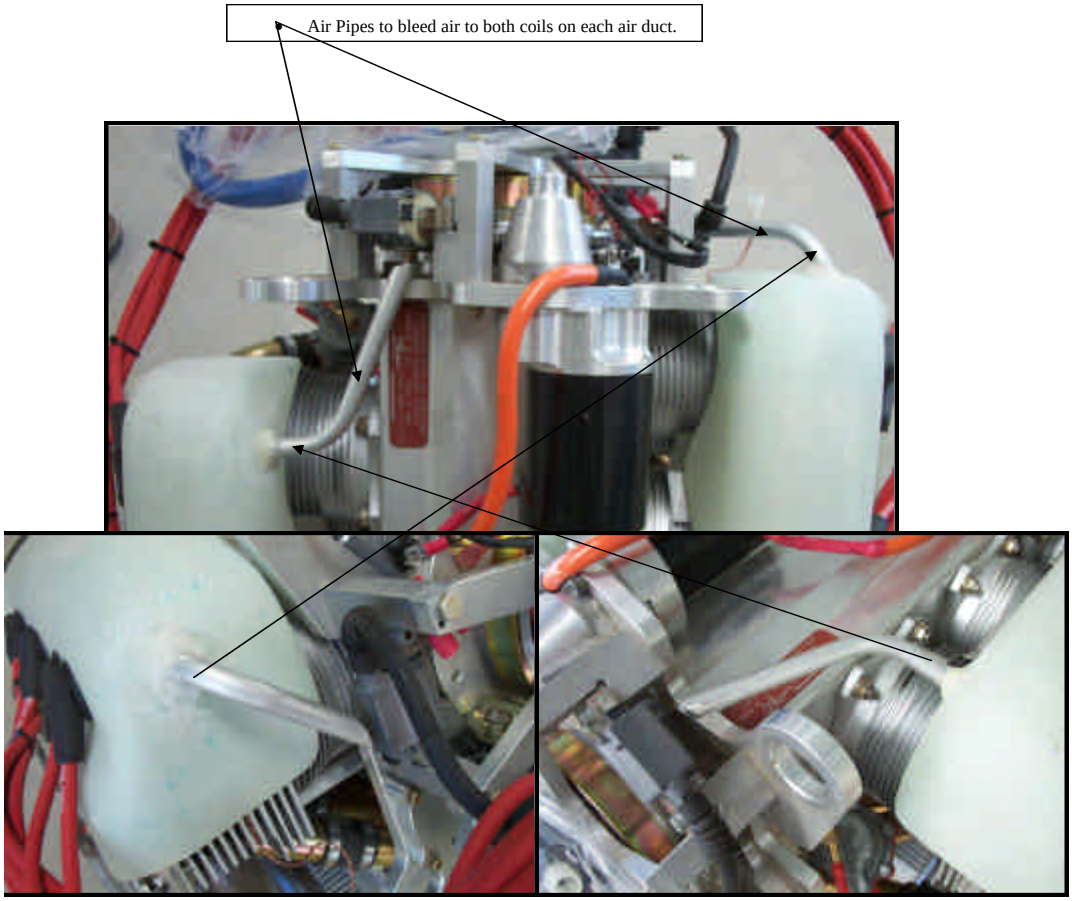
Materials Required:

Please note: Prop Selection should aim to obtain 2800-2900 @ T/O & around 3200RPM full power Straight & Level. Operation of the engine out side these Values may affect engine tuning.

- *All Glass joins must have smoothed interiors.*
- *Strongly recommend engines use air mixer box, adequate filter size, carby heat arrangement.*
- *Note: Slope of air scat hose to carby & glass Joiner.*
- *Important that scat hose not bunched up on carby. (no tight bends in scatt hose). Use a glass joiner to prevent this and change direction.*
- *Upper sensor holes on carby intake must not be covered by scat hose.*


Keep cold junction of CHT Sender away from heads
Air Inlet from outside cowl
Air Induction
Air Ducts attached by front/back rocker cover cap screws
Prop Torque on wooden Jabiru prop 6 ½ -7Ft LB (9NM)

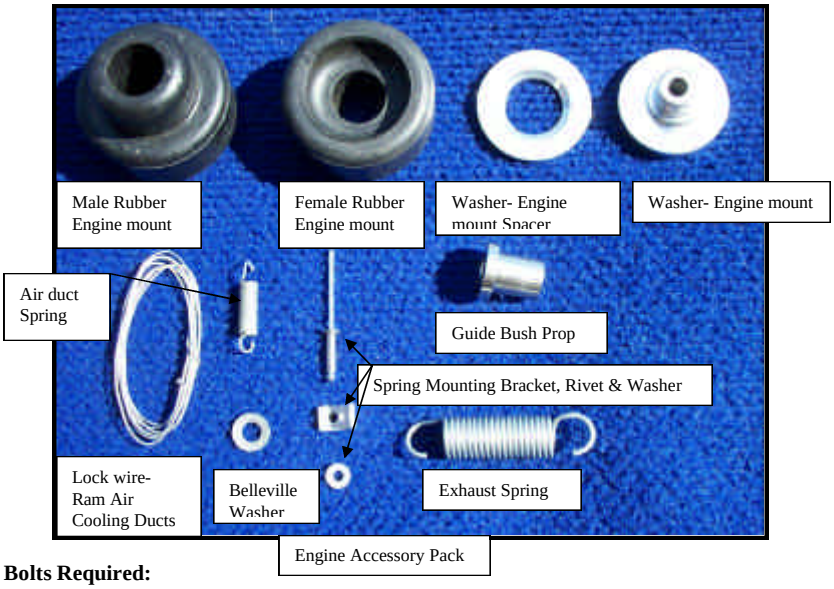
REVISION	0	1	2	3	4					Dated : 22 August 2003	Page: 1


Air Pipes to bleed air to both coils on each air duct.

Connect Engine

Reference: Photo

Parts Required: Various – Refer to Packing List for this Section



Bolts Required:

Engine – Engine Mount :- AN4-31a x 4

Procedure:

1. Attach Female Rubbers Engine mount to both engine attach point on the Top Only.
2. Attach Male Rubber Engine mount to lower engine mount pins.

3. With the Back of the Aircraft Supported & the wheels chocked, lift the engine onto the engine mount.
4. Attaching the lower engine mount points first by tilting the front of the engine down. Continue raising the engine & align the top engine mount pins.

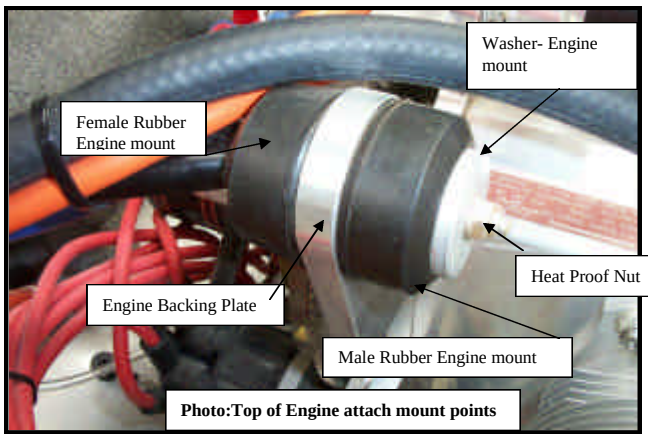
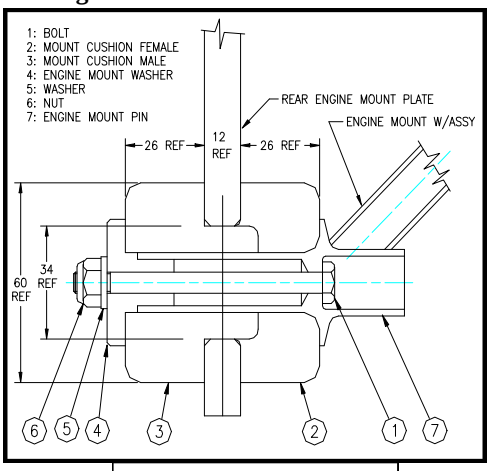
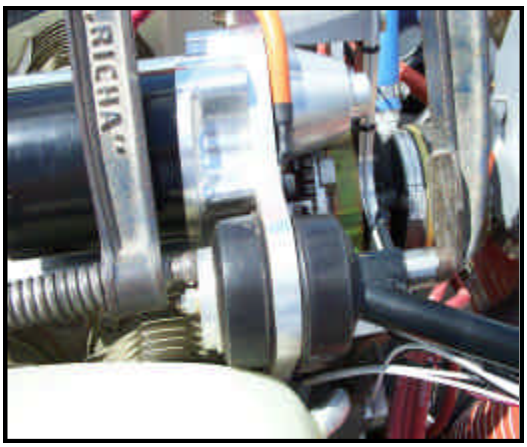


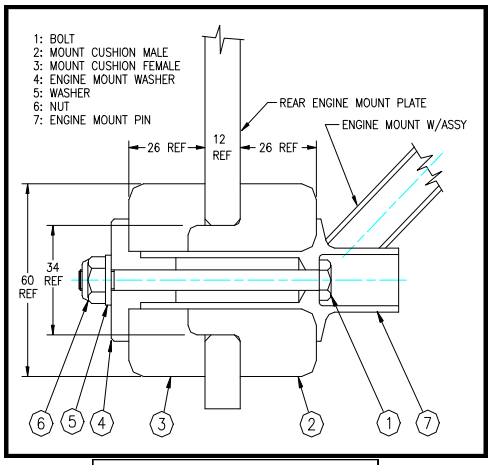
Photo:Top of Engine attach mount points

5. Insert the Male Rubber engine mount onto TOP engine mount spigots followed by the Washer- Engine mount Spacer, Washer- Engine mount, ¼" washer & Heat Proof nut. Refer to drawing.
6. Compress Rubbers by using a long deep reach socket inside in pin Engine mount & a G-Clamp with the swivel take off the Ball. See Photo.



Top Engine mount Rubber

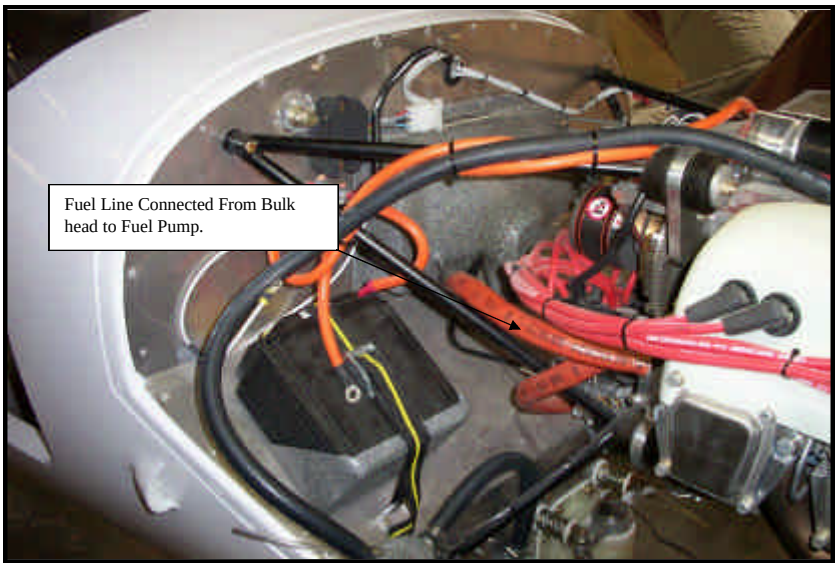




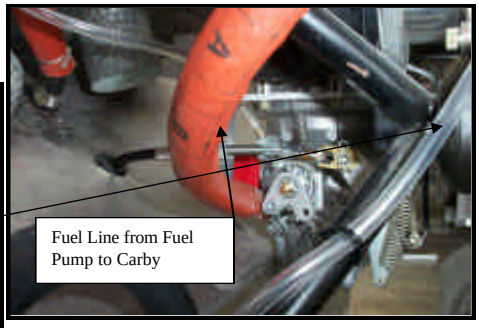
Bottom Engine mount Rubber

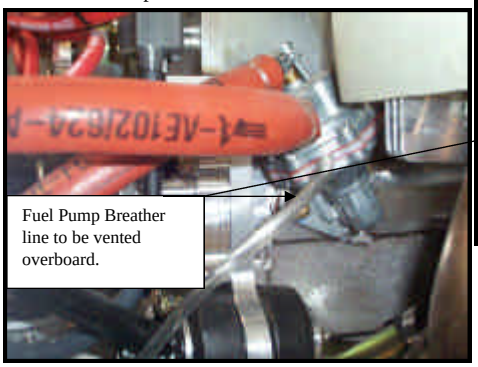
7. Repeat same procedure for lower engine mount rubbers except attach the Engine mount rubber male first. Refer to Drawing.
8. Tighten Nut until firm. (Engine mount Washer will compress until it touches Pin Engine mount.)

THIS DRAWING IS COPYRIGHT AND MUST NOT BE COPIED WITHOUT CONSENT OF AVTECH PTY LTD
DIMENSIONS IN MILLIMETRES
DO NOT SCALE
PROJECTION
UPPER ENGINE MOUNT
LOWER ENGINE MOUNT
REAR ENGINE MOUNT PLATE
ENGINE MOUNT W/ASSY
26 REF
18 REF
34 REF
60 REF
TORQUE 11 Nm (8 ftlb)
ITEM
PART No.
DESCRIPTION
QTY.
MATERIAL
1 AN4-31A BOLT
2 PG10712N CUSHION MOUNT FEMALE
3A PG10722N CUSHION MOUNT MALE
4 4094224 WASHER ENGINE MOUNT
5 AN960-416 WASHER
6 MS21042-4 NUT
7 4214934 WASHER- ENG MNT SPACER
PURCHASED PARTS TO PS23J-10
LIMITS
DRAWN
APPR.
APK
AVTECH P/L
A.C.N. 010 786 073
HINKLER AIRPORT
BUNDABERG
TITLE
VIBRATION MOUNT INSTALLATION
JABIRU AIRCRAFT
SCALE 1:1
ISS. 1
DATE 001109
DWG. NO. 9606004
SHEET 1 OF 1 A3



9. Connect the fuel line to fuel pump. Refer to photo). Make sure the fireproof sleeve is in place.





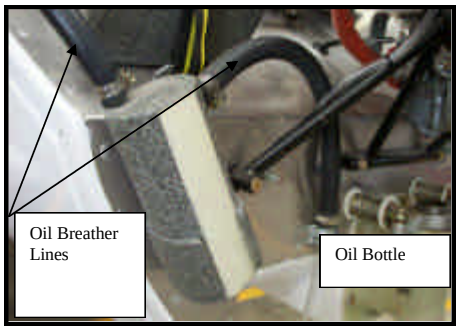
10. Make sure the Fuel Line from fuel pump to the carburettor in connected.
11. Ensure that the fuel overflow line is in place, refer to photo, and secured to vent overboard.

12. Fit the oil over flow bottle to the firewall by drilling and Riveting oil bottle holder in place using 73as 6-6 rivets. Refer to photo
13. Connect the oil breather line.

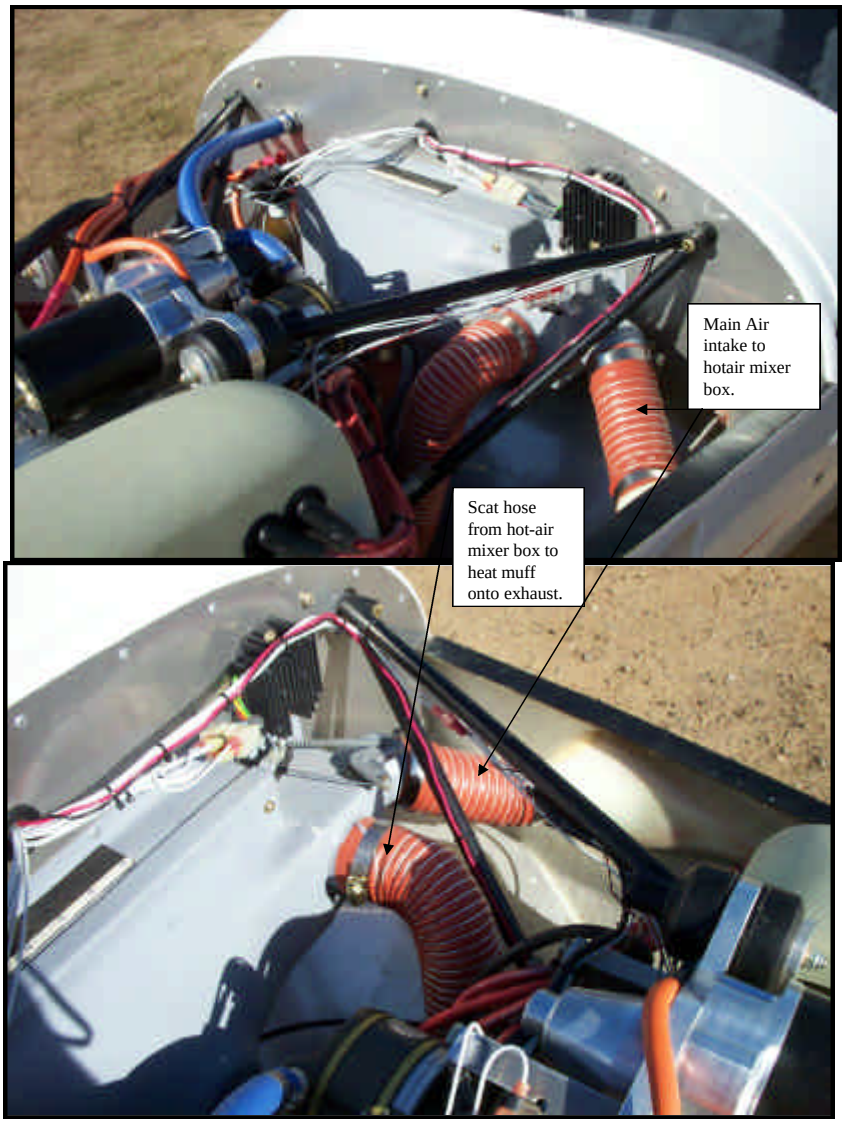
Ensure that the oil overflow line is in place and vents overboard.

14. Fit Scat hoses - NACA duct to Air Inlet Housing Assembly.

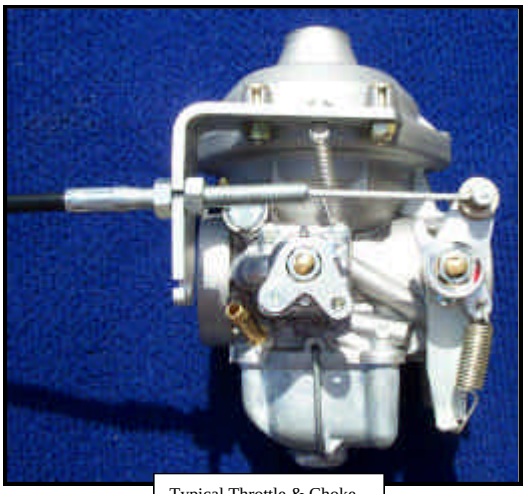
- Hot Air Muff to Carby Heat Inlet



- Air Inlet Housing Assembly to the Carburetor. (refer to photo)



15. Fit Carburetor cable to Carby making sure you use 2 x 5/16” washers on pin to align cable & a split pin on opposite side.



Typical Throttle & Choke

Fit Engine Sensors

Reference: Photo

Parts Required: as detailed

Materials Required:

Procedure:

Cylinder Head Temperature Sensor

The cylinder head temperature sensor used in Jabiru aircraft is a J-type thermocouple located under the rear spark plug of No: 6 cylinder. The VDO 310 980 Cylinder Head Temperature Gauge Kit is installed as standard equipment in the Jabiru Aircraft.

Photo– Position of oil temperature sensor, oil pressure sensor and oil pressure switch

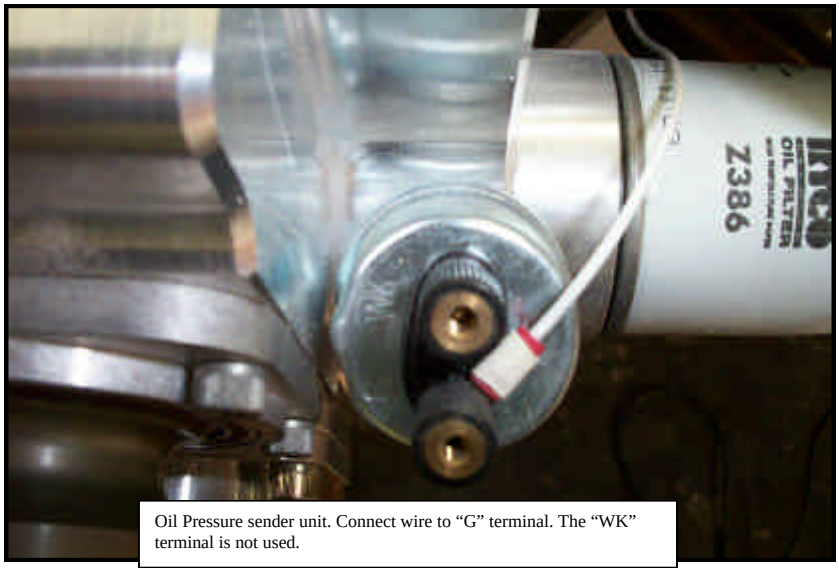
Oil Temperature Sensor

The Oil Temperature Sensor used is a VDO 320 028 which is located in the bottom of the sump as shown in photo.

Oil Pressure Sensor

The oil pressure sensor is located at the base of the oil filter and this can be seen in photo.

The sensor used is VDO 360 001



Oil Pressure sender unit. Connect wire to “G” terminal. The “WK” terminal is not used.

Exhaust Gas Temperature Probe

The exhaust gas probe used on Jabiru’s is a VDO 310 306 Pyrometer which is supplied as a complete kit. The probe is mounted in an exhaust pipe and as such the mount must be welded on, *(this fitting is not standard)* and this is best done at the time of order although the exhaust pipe may be returned and the fitting added it may take a couple of weeks before the pipe is returned to you.

Magnetic Pick-up Sensor (Tachometer)

The sensor used is a 6.35 x 22 mm analogue magnetic pick-up and is fitted to a bracket on the alternator housing as shown in photo in the engine electrical section.

Tacho sender location